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ABSTRACT

The reading program, Words in Color, was used as a 1-year program at the first-grade level in an elementary school in Gainesville, Florida. The reading program in each of four control classes was identifiably unique and varied. Predata were collected using the Metropolitan Readiness Test, Form A, in September, 1969 and the Otis Quick Scoring Mental Ability Test, Short Form A, in January, 1970. Achievement data, as measured by the vocabulary and comprehension sections of the Gates-MacGinitie Reading Test, Primary A, Form 2, were collected in May, 1970. The analysis of covariance was employed to analyze the data for the students using the Words in Color program and the four control classrooms. In all four of the analyses, the students in the Words in Color reading program, receiving it as a 1-year program only at the first-grade level, had significantly lower ($p<.05$) mean scores in vocabulary and comprehension, as measured by the Gates-MacGinitie, than did three of the control classes. Tables are included. (AW/Author)

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WORDS IN COLOR - A ONE-YEAR PROGRAM?

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The reading program, Words in Color, authored by Dr. Caleb Gattegno, has proved to be an effective means of teaching reading for several populations. In almost all situations reported in the literature the program has been successfully taught for a span of at least two years and in most cases three years, usually commencing at the first grade level. Bentley reported in 1966, based on a questionnaire sent to school systems using the Words in Color Program, that of the fifty replies, all were in the second or third year of the program and all but one system were planning to continue it (1). Dodds, in a longitudinal study at Indian Hills School in Euclid, Ohio, found that children beginning the program in kindergarten and continuing through several grades showed significant gains in reading vocabulary and spelling compared to a control group using a basal reader approach (2).

As a brief review for those unfamiliar with Words in Color, it designates each of the forty-seven sounds in the English language by a particular color. A total of two hundred eighty shapes, or signs, composed of single letters or groups of letters, are colored according to how they sound in a given word. A sound is always represented by the same color regardless of how it is spelled (3).

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1. Bentley, Harriett. "Words in Color," Elementary English, XLIII (May, 1966) 515-517. (Partial report of N.C.T.E. Meeting, 1965.)

2. Dodds, Wm. A Longitudinal Study of Two Beginning Reading Programs: Words in Color and Traditional Reader. Unpublished Doctoral Dissertation, Western Reserve University, Cleveland, Ohio, 1966.

3. Gattegno, Caleb. Revised Teacher's Guide, Words in Color. New York: Xerox Corporation, Educational Division, 1967.

The materials used in the program are composed of the following: eight Phonic Code Charts which show a systematic organization of the spellings in English according to sounds; twenty-one word charts which introduce the sounds of English in regular and irregular spellings; three books which introduce the vowel sounds, consonant sounds, regular spellings, irregular spellings and appropriate stories.

Words in Color has been used as a beginning approach to reading, not only for elementary children, but for illiterate adults, as a remedial agent for upper elementary children, and for slow learners with an IQ range of 50 to 75 (4). It has been shown to be successful with all of these populations.

At an elementary school in Gainesville, Florida, Words in Color was tried as a one-year program only, at the first grade level for each of the last three years. The students in this school were from predominantly white, upper middle class families and most had had kindergarten training. Upon completion of the first grade, the students moved into second grade and received whatever reading program was being taught at that level.

The writer investigated the success of this one-year Words in Color program, as measured by the students performance on the vocabulary and comprehension sections of the Gates-MacGinitie Reading Test, Primary A, Form 2. This investigation was done during the 1969-70 school year, the third year of operation for the program. A co-variate measure was obtained on each of the twenty-eight subjects through the use of the Metropolitan Readiness Test. Four first grade control groups in the same school were also tested, using the

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4. Bentley, Harriett. What Approach to Teaching Reading? A Chapter in Issues and Innovations in the Teaching of Reading, by Joe L. Frost, Scott, Foresman and Co., 1967, 184-191.

Metropolitan Readiness Test and the Gates-MacGinitie Reading Test. The reading program in each control class was identifiably unique and varied from a predominantly phonetic approach in one classroom to a combination of various methods in another. The control classes varied in size from fourteen students to twenty-four students.

DATA ANALYSIS

The data collected on the two instruments were analyzed using analysis of covariance. Summary data showing the means from the Gates-MacGinitie (Y) are given in Table I. The data shown under Treatment 4 represent the results

TABLE I

Means for MRT (X), Gates-MacGinitie Vocabulary (Y), and adjusted means (Y) for five treatment groups

Treatment	1	2	3	4	5
MRT ($\bar{X}i$)	71.928	63.176	73.750	66.714	68.958
Gates ($\bar{Y}i$)	40.928	25.882	42.850	31.500	40.375
Adj. $\bar{Y}i$	38.868	29.457	39.616	32.797	40.227

of the Words in Color program. The actual mean for vocabulary achievement (31.500) on the Gates-MacGinitie, as well as the adjusted mean (32.797), due to the influence of the co-variate, were found to be significantly lower ($p < .05$) than the mean achievement in vocabulary for Treatments 1, 3, and 5.

The data in Table II show the results for the same five Treatment classes, using the Metropolitan Readiness Test scores and the scores from the comprehension section of the Gates-MacGinitie. Again, Treatment 4 represents Words in Color, and the mean achievement in comprehension, both

for the actual (18.464) and adjusted (19.418) means, was significantly lower ($p < .05$) than the means of three other control classes.

TABLE II

Means for MRT (Y), Gates-MacGinitie Comprehension (Y), and adjusted means (Y) for five treatment groups

Treatments	1	2	3	4	5
MRT (X)	71.928	63.176	73.750	66.714	68.958
Gates ($\bar{Y}i$)	24.214	14.765	26.650	18.464	25.417
Adj. $\bar{Y}i$	22.699	17.393	24.273	19.418	25.307

A second co-variate, IQ, as measured by the Otis Quick-Scoring Mental Ability Test, Short Form A, was utilized in this study. The Otis was administered in January, 1970, midway through the school year. The data in Table III show the mean IQ's for each treatment group, and the mean vocabulary scores, actual and adjusted, from the Gates-MacGinitie. When the co-variate of IQ is used, the same conclusions are reached concerning Words in Color.

TABLE III

Means for Otis (X), Gates-MacGinitie Vocabulary (Y) and adjusted means (Y) for five treatment groups

Treatments	1	2	3	4	5
Otis ($\bar{X}$)	120.357	113.476	119.818	118.393	114.458
Gates ($\bar{Y}i$)	40.929	27.000	42.000	31.500	40.375
Adj. $\bar{Y}i$	39.784	28.288	41.046	31.050	41.316

The mean achievement in vocabulary (31.500) and the adjusted mean (31.050) for vocabulary achievement are significantly lower ($p < .05$) than the mean achievement in three other treatment groups.

The same conclusion is reached when the comprehension scores of the Gates-MacGinitie are analyzed using the Otis as a co-variate. As seen in Table IV, the means for achievement in comprehension as shown by the Gates-MacGinitie Reading Test are significantly lower ($p < .05$) than three other treatment groups.

TABLE IV

Means for Otis (X), Gates-MacGinitie Comprehension (X) and adjusted means (Y) for five treatment groups

Treatments	1	2	3	4	5
Otis (X_i)	120.357	113.476	119.818	118.393	114.458
Gates ($\bar{Y}_i$)	24.214	15.905	26.227	18.464	25.522
Adj $\bar{Y}_i$	23.498	16.756	25.633	18.195	26.075

SUMMARY AND CONCLUSION

The reading program, Words in Color, was used as a one-year program at the first grade level in an elementary school in Gainesville, Florida. Pre-data were collected using the Metropolitan Readiness Test, Form A, in September, 1969, and the Otis Quick Scoring Mental Ability Test, Short Form A, in January, 1970. Achievement data, as measured by the vocabulary and comprehension sections of the Gates-MacGinitie Reading Test, Primary A, Form 2, were collected in May, 1970. The analysis of covariance was employed to analyze the data for the students using the Words in Color program and the four

control classrooms.

The same conclusions were reached in all four of the analyses. The students in the Words in Color reading program, receiving it as a one-year program only, at the first grade level, had significantly lower ($p < .05$) mean scores in vocabulary and comprehension, as measured by the Gates-MacGinitie, than did three of the control classes.

IMPLICATIONS

The writer believes that since the Words in Color program was used only for a one-year program, and because it is structured primarily for more than a one-year program, the child lacking in reading readiness was not able to achieve as well in this program as he might have in one of the other three first grade classrooms. Also, by leaving a uniquely defined program at the end of first grade and entering a second grade program that is based, not on a continuation of the first year, but on a more general reading program, the child may tend to encounter more serious problems in reading than usual in the second year.